

In the claims:

1. (currently amended) An apparatus (1) for converting a flow of matter (4) containing hydrocarbons to a hydrogen-enriched fluid flow (10), comprising:

a heating apparatus (5) for production of a heating stream (6), ~~wherein the heating stream (6) is separated into two flue gas partial flows;~~

a first converter (2) and a second converter (3) arranged behind said first converter in a flow direction to ~~at~~the hydrogen-enriched fluid flow (10), wherein each of the first converter and the second converter is configured for reforming hydrocarbons to hydrogen, and wherein the flow of matter (4) containing hydrocarbons is converted in the first converter first and in the second converter further to ~~at~~the hydrogen-enriched fluid flow;

a first heating element (8) provided with an inlet opening and an outlet opening that is flowed-through by the heating stream for heating at least one of the first and second converters (2, 3), wherein the first heating element comprises a first flue gas chamber (8a) for heating the second converter (3) and a second flue gas chamber (8b) downstream from the first flue gas chamber for heating the first converter (2), and wherein ~~in at least one operating phase, the heating stream (6) that flows through the first flue gas chamber (8a) for the second converter (3) flows~~

completely in a counterflow direction to the flow of matter (4) in the second converter (3);

a second heating element (9) provided with an inlet opening (12) and an outlet opening (11) that is flowed-through by the heating stream (6) for heating at least one of the first and second converters, wherein the second heating element is located between the first and second converters; and

~~an outlet opening provided on the second heating element,~~
~~wherein the second heating element is provided with a flap for closing the outlet opening.~~

flaps for closing each of the inlet opening (12) and the outlet opening (11) of the second heating element, such that the second heating element (9) forms a thermal separation between the first converter (2) and the second converter (3) when the inlet opening (12) and the outlet opening (11) are closed by the flaps during at least one operating phase.

2. (currently amended) The apparatus (1) according to claim 1, wherein ~~at least in one operating phase,~~ the heating stream (6) for the first and second converters ~~(2, 3)~~ that flows through the second flue gas chamber (8b) flows completely in a counterflow direction to the flow of matter (4) in the first converter (2).

3. (currently amended) The apparatus (1) according to claim 1, wherein the second heating element (9) ~~that is flowed through by the heating stream (6) is provided for heating one of the first and second converters (2, 3) in a start phase~~ heats at least one of the first converter (2) and the second converter (3) when the flaps at the inlet opening (12) and the outlet opening (11) are opened during a start phase.

4. (Cancelled).

5. (currently amended) The apparatus (1) according to claim 3, wherein ~~an inlet opening (12) and/or an outlet opening (11) of the first heating element (6, 8) is provided with the flap for apportioning the heating stream (6), and wherein an inlet opening of the second heating element is provided with the flap for apportioning the heating system~~ the inlet opening and/or outlet opening of the first heating element (8) is further provided with a flap for closing the inlet opening and/or opening of the first heating element (8).

6. (currently amended) The apparatus (1) according to claim 5, wherein at least one control unit is provided for controlling the flaps.

7. (previously presented) The apparatus (1) according to claim 3, wherein the first and second converters (2, 3) and/or the first and second heating elements (8, 9) are arranged approximately coaxially to one another.

8. (previously presented) The apparatus (1) according to claim 3, wherein the heating apparatus (5) is arranged approximately coaxially to the converters (2, 3) and/or the heating elements (8, 9).

9. (previously presented) The apparatus (1) according to claim 3, wherein the heating apparatus (5) is arranged approximately centrally to the converters (2, 3) and/or the heating elements (8, 9).

10. (currently amended) A fuel cell assembly, comprising:
a fuel cell unit and an apparatus (1) for converting a hydrocarbon-containing flow of matter (4) to a hydrogen-enriched fluid flow (10), wherein the apparatus (1) comprises a heating apparatus (5) for production of a heating stream (6), ~~wherein the heating stream (6) is separated into two flue gas partial flows;~~ a first converter (2) and a second converter (3) arranged behind said first converter in a flow direction to at the hydrogen-enriched fluid flow (10), wherein each of the first converter and the second converter is configured for reforming hydrocarbons to hydrogen, wherein the flow of matter containing hydrocarbons (4) is

converted in the first converter first and in the second converter further to at the hydrogen-enriched fluid flow; a first heating element (8) provided with an inlet opening and an outlet opening that is flowed-through by the heating stream for heating at least one of the first and second converters (2, 3), wherein the first heating element comprises a first flue gas chamber (8a) for heating the second converter (3) and a second flue gas chamber (8b) downstream from the first flue gas chamber for heating the first converter (2), and wherein ~~in at least one operating phase~~, the heating stream (6) ~~for the second converter (3) that flows through the first flue gas chamber (8a)~~ flows completely in a counterflow direction to the flow of matter (4) in the second converter (3); a second heating element (9) provided with an inlet opening (12) and an outlet opening (11) that is flowed-through by the heating stream for a heating at least one of the first and second converters, wherein the second heating element is located between the first and second converters; and ~~an outlet opening provided on the second heating element, wherein the second heating element is provided with a flap for closing the outlet opening~~flaps for closing each of the inlet opening (12) and the outlet opening (11) of the second heating element, such that the second heating element (9) forms a thermal separation between the first converter (2) and the second converter (3) when the inlet opening (12) and the outlet opening (11) are closed by the flaps during at least one operating phase.

11. (currently amended) A motor vehicle with a fuel cell assembly, wherein the fuel cell assembly comprises:

a fuel cell unit and an apparatus (1) for converting a hydrocarbon-containing flow of matter (4) to a hydrogen-enriched fluid flow (10), wherein the apparatus (1) comprises a heating apparatus (5) for production of a heating stream (6), ~~wherein the heating stream (6) is separated into two flue gas partial flows;~~ a first converter (2) and a second converter (3) arranged behind said first converter in a flow direction to ~~at~~ the hydrogen-enriched fluid flow (10), wherein each of the first converter and the second converter is configured for reforming hydrocarbons to hydrogen, and wherein the flow of matter (4) containing hydrocarbons is converted in the first converter first and in the second converter further to ~~at~~ the hydrogen-enriched fluid flow; a first heating element (8) provided with an inlet opening and an outlet opening that is flowed-through by the heating stream for heating at least one of the first and second converters (2, 3), wherein the first heating element comprises a first flue gas chamber (8a) for heating the second converter (3) and a second flue gas chamber (8b) downstream from the first flue gas chamber for heating the first converter (2), and wherein ~~in at least one operating phase, the heating steam (6) for the second converter (3) that flows through the first flue gas chamber (8a) flows completely in a counterflow direction to the flow of matter (4) in the second converter (3);~~ a second heating element (9)

provided with an inlet opening (12) and an outlet opening (11) that is
flowed-through by the heating stream for heating at least one of the first
and second converters, wherein the second heating element is located
between the first and second converters; and an outlet opening provided
on the second heating element, wherein the second heating element is
provided with a flap for closing the outlet opening flaps for closing each of
the inlet opening (12) and the outlet opening (11) of the second heating
element, such that the second heating element (9) forms a thermal
separation between the first converter (2) and the second converter (3)
when the inlet opening (12) and the outlet opening (11) are closed by the
flaps during at least one operating phase.